MANAGEMENT OF USED ANTIFREEZE
NORTH DAKOTA DEPARTMENT OF HEALTH - DIVISION OF WASTE MANAGEMENT
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The North Dakota Department of Health recognizes the potential hazards to human health and the environment from the indiscriminate disposal of used antifreeze. The Division of Waste Management in conjunction with the Divisions of Water Quality and Municipal Facilities has developed this management outline to assist industry with proper disposal of used antifreeze.

What is Used Antifreeze? Antifreeze is the liquid coolant contained in engine radiators. Used antifreeze is generated when this coolant is removed or changed. Normally, used antifreeze is disposed, but some businesses are opting to recycle the used antifreeze rather than dispose of it.

There are two main compounds in antifreeze; ethylene glycol or propylene glycol. Both are toxic to humans and animals, even in small amounts. Children, pets, and wildlife may be attracted by its sweet odor and taste. When changing your antifreeze, any spills should be diluted with large amounts of water. *Do not drain used antifreeze on the ground or into storm sewers.*

How to Manage Used Antifreeze. The Department recommends that used antifreeze be stored in containers that are clearly marked or labeled with the words “used antifreeze.” From this point on, it is up to the generator to decide on how to best manage or dispose of the used antifreeze. There are three main options: reuse, recycle or dispose.

The Department encourages reuse and recycling of used antifreeze whenever possible. Used antifreeze may be reused (recycled) by removing the suspended solids through filtration, and then replacing that used antifreeze back into the vehicle’s cooling system. This may require adding fresh antifreeze and water to the cooling system in order to meet manufacturer specifications.

Recycling of used antifreeze may take on several different methods. These methods range from simple filtration to distillation and reverse osmosis with the addition of rust inhibitors and other additives. Once recycled, the used antifreeze can then be mixed with new antifreeze to the manufacturer’s recommended antifreeze/water ratio or to the temperature protection standard.

Disposal of Used Antifreeze. *Never* discharge used antifreeze into streams or other surface waters, storm sewer systems, septic systems, or onto the ground. Antifreeze places a very large oxygen demand on surface waters. This means that the dissolved oxygen in the water is used up as the chemicals in antifreeze are broken down naturally. The removal of the dissolved oxygen causes plants, fish and other aquatic species to die from lack of oxygen. The antifreeze chemicals may also be directly toxic to some species.

Septic systems are not designed to handle this type of waste. The bacteria in the septic system are not able to breakdown or tolerate the amount of antifreeze and will die. This causes problems by reducing the effectiveness of the treatment process since killing off the bacteria does not allow any treatment to occur. The used antifreeze may travel into the drainfield and impact groundwater sources. Solids from other untreated wastes may also be carried into the drainfield and cause plugging of the soil pores, reducing the lifespan of the septic system. Disposal into surface water or septic systems as described are violations of both federal and state rules and regulations.

If recycling used antifreeze is not practical, discharging to a publicly owned treatment works (POTW) may be allowed by the local POTW authority. The Department allows municipalities to accept disposal of used antifreeze provided such disposal does not upset the treatment process or violate local pretreatment requirements. If large amounts are involved, the POTW may instruct the generator to release the used antifreeze slowly over a period of several days. This is because the high oxygen demand of antifreeze may also inhibit or kill the bacteria needed for wastewater treatment to occur. Local pretreatment requirements may regulate the discharge of certain metals or chemicals that are not adequately reduced or removed through the conventional wastewater treatment methods.

Should you have any questions regarding the management of used antifreeze, call the Division of Waste Management at 701-328-5166.